INTELLIGENCE TRANSITION IN THE UNITED STATES ARMY: ARE WE ON THE RIGHT PATH?

BY

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INTELLIGENCE TRANSITION IN THE UNITED STATES ARMY: ARE WE ON THE RIGHT PATH?

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ABSTRACT

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INTELLIGENCE TRANSITION IN THE UNITED STATES ARMY: ARE WE ON THE RIGHT PATH?

This paper examines intelligence transformation in the United States Army and ascertains military intelligence ability to support full spectrum operation. ¹ It analyzes and compares the Army's past, present and future Intelligence structure as well as past support to operations and ongoing support to operations in Iraq and Afghanistan. It also compares and contrasts less tangible items such as changes in MOSs, training, culture and mindset. Finally, it examines some of the United States' old challenges, such as Russia, and emerging challenges, such as China. While this paper discusses tactical issues, the overall focus provides operational and strategic recommendations on the direction Army Intelligence is moving.

Robert M. Gates, U.S. Secretary of Defense, recently wrote an article that appeared in Foreign Affairs entitled "A Balanced Strategy: Reprogramming the Pentagon for a New Age." Secretary Gates' comments can be summarized with the following "the Pentagon has to do more than modernize its conventional forces; it must also focus on today's unconventional conflicts--and tomorrow's." The Army's Military Intelligence infrastructure has changed tremendously in the last four years. Current events in Iraq and Afghanistan are the primary factors driving current and future Army Intelligence

January/February 2009.

¹ Field Manual No. 3-0, Headquarter Department of the Army Washington, DC, 27 February 2008. The Army's operational concept is full spectrum operations: Army forces combine offensive, defensive, and stability or civil support operations simultaneously as part of an interdependent joint force to seize, retain, and exploit the initiative, accepting prudent risk to create opportunities to achieve decisive results. They employ synchronized action—lethal and nonlethal—proportional to the mission and informed by a thorough understanding of all variables of the operational environment. Mission command that conveys intent and an appreciation of all aspects of the situation guides the adaptive use of Army forces.

² Robert M. Gates, "A Balanced Strategy: Reprogramming the Pentagon for a New Age" Foreign Affairs,

restructuring. The vision of Army leaders is that intelligence should drive operations. The question we must ask is: are we moving in the right direction and will the current azimuth posture the Army for future conflicts?

Shortly after being appointed as the 34th Chief of Staff of the Army, General Eric Shinseki announced his vision to transform the Army into a force that is strategically responsive and dominant across the spectrum of operations.³ On October 12, 1999 at the annual Association of the United States Army (AUSA) conference, he told the Army's senior leadership "the Army must be more deployable, lethal, agile, versatile, survivable and sustainable to meet the needs of the nation."⁴ (See figure 1.) Thus began the Army's ongoing transformation.⁵ Naturally, as the Army transforms, each of its components/branches will do so as well. Most of us understand that even slight changes in very large organizations can be incredibly difficult and complex. The fact that the Army/country is in the midst of multiple combat operations significantly compounds the challenges. Army leaders frequently characterize the Army's ongoing transformation during war as trying to build an airplane while it is in flight. This analogy is probably not too far from the truth.

³ David T. Pyne, "Memorandum to Secretary of Defense Designate Donald Rumsfeld: A Feasibility Study on the Chief of Staff of the Army's Transformation Plan," December 7, 2000.

⁴ General Eric Shinseki, "Association of the United States Army (AUSA) conference Speech", October 12, 1999.

⁵ General Peter Schoomaker, "Statement by General Peter Schoomaker, Chief of Staff United States Army, before the Commission on National Guard and Reserves," US Army Homepage, December 14, 2006. In December 2006, US Army Chief of Staff General Peter Schoomaker testified before Congress on the importance and sweep of Army transformation. He said, "The Army is steadfast in its determination to transform the total force from a Cold War structured organization into one best prepared to operate across the full spectrum of conflict. This effort includes modernization, modular conversion, rebalancing our forces across the active and reserve components, and a force generation model that provides for continuous operations."

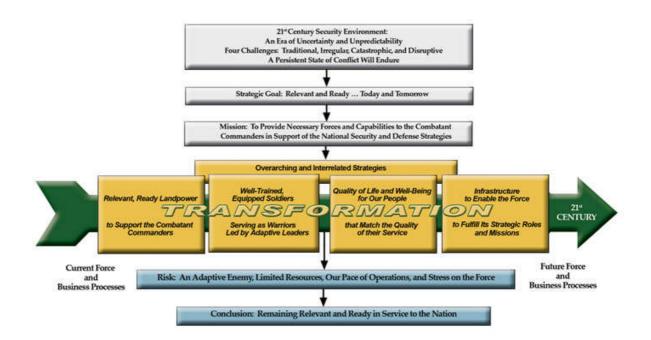


Figure 1. U.S Army Transformation

General J.N. Mattis, Commander, U.S. Joint Forces Command, released a memorandum in August 2008 with the subject: Assessment of Effects Based Operations.

Gen Mattis makes four observations.

First, operations in the future will require a balance of regular and irregular competencies. Second, the enemy is smart, and adaptive. Third, all operating environments are dynamic with an infinite number of variables; therefore, it is not scientifically possible to accurately predict the outcome of an action. Fourth, we are in error when we think that what works (or does not work) in one theater is universally applicable to all theaters.⁶

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⁶ General J.N. Mattis, "Assessment of Effects Based Operations" Memorandum for U.S. Joint Forces Command, 14 August 2008.

If intelligence is truly going to drive operations, then these observations should apply to intelligence as well.

Background:

The 2006 Quadrennial defense Review (QDR) established 'prevailing in the Long War' as a top priority for the Department of Defense (DOD). "The force planning framework calls for U.S. forces to be able to: defend the homeland; prevail in the War on Terror and conduct irregular operations; and conduct and win conventional campaigns."

In the last 40 years U.S. forces have conducted operations in Vietnam, Lebanon,
Grenada, Panama, Somalia, Haiti, Bosnia, Kosovo, Afghanistan, Iraq, the Horn of Africa,
and more. However, of all these conflicts, only in Desert Shield/Storm did the military
employ traditional conventional doctrine throughout the conflict. All the other operations
were: unconventional; a combination of conventional and unconventional; irregular;
asymmetric; or some combination of the four. Despite this, the U.S. Military, and the
Army in particular, maintained a cold war conventional mentality and training model
until the conflicts in Iraq and Afghanistan compelled them to change. This paper
documents many of the dramatic changes Army Intelligence has made to win the counterinsurgency (COIN) wars in Iraq and Afghanistan. The question now is: "Has the
pendulum swung too far in the other direction?" According to the Army Strategy 2008,
the Army has focused training and leader development almost exclusively on COIN to
the detriment of Major Combat Operations (MCO).⁸

⁷ Quadrennial Defense Review Report, February 6, 2006.

⁸ Robert M. Gates, "A Balanced Strategy: Reprogramming the Pentagon for a New Age" Foreign Affairs, January/February 2009.

It is interesting to note that while the Army is confident about its COIN capabilities and concerned about its MCO proficiency; the Secretary of Defense's thoughts are contrary about US forces as a whole. In the Secretary's Foreign Affairs article, he opines

As secretary of defense, I have repeatedly made the argument in favor of institutionalizing counterinsurgency skills and the ability to conduct stability operations. I have done so not because I fail to appreciate the importance of maintaining the United States' current advantage in conventional war fighting but rather because conventional and strategic force modernization programs are already strongly supported in the services, in Congress, and by defense industry.⁹

Secretary Gates elaborates further,

Even as its military hones and institutionalizes new and unconventional skills, the United States still has to contend with the security challenges posed by the military forces of other countries. The images of Russian tanks rolling into Georgia last August were a reminder that nation-states and their militaries do still matter. Both Russia and China have increased their defense spending and modernization programs to include air defense and fighter capabilities that in some cases approach the United States' own. In addition, there is the potentially toxic mix of rogue nations,

⁹ Robert M. Gates, "A Balanced Strategy: Reprogramming the Pentagon for a New Age" Foreign Affairs, January/February 2009.

terrorist groups, and nuclear, chemical, or biological weapons. North Korea has built several bombs, and Iran seeks to join the nuclear club. 10 The fundamental question is whether the army is structured to fulfill the Nation's ground forces requirements and is Army Intelligence postured to meet the ground forces needs.



Russian tanks move toward South Ossetia's capital (8 August 2008).

The US Army views the future as an era of persistent conflict, a period of protracted confrontation among state, non-state and individual actors who increasingly use violence to achieve their political and ideological ends. 11 The Army's Field Manual (FM) 3-0, Operations, goes on to say that during this period of persistent conflict, irregular warfare will become an increasingly dominant operational theme. Another major question the Army is asking itself is how it should adapt its force mix to account for a greater likelihood and frequency of irregular warfare, while maintaining the capability to prevail in major combat operations.¹²

¹⁰ Robert M. Gates, "A Balanced Strategy: Reprogramming the Pentagon for a New Age" Foreign Affairs, January/February 2009.

¹¹ The Army Strategy, 22 August 2008. ¹² The Army Strategy, 22 August 2008.

Military Intelligence Support in the U.S. Army:

In this section, we examine the evolution of Military Intelligence support to the warfighter in the U.S. Army. We briefly review the maturation over the past four years of the three major intelligence disciplines and their impact on the battlefield. The disciplines are: Human Intelligence (HUMINT); Signals Intelligence (SIGINT); and Geospatial Intelligence (GEOINT) or Imagery Intelligence (IMINT). We also examine the impact Intelligence Surveillance and Reconnaissance (ISR) has had on ground forces and discuss how ISR is being controlled as well as how ISR should be employed in the future. Finally, we review intelligence structure to include manning, training and readiness, and comment on its effectiveness. If necessary, we recommend changes to enhance support.

An October 2008 information paper titled "Army Intelligence Transformation" gives some insight on the plans Army leadership has for Military Intelligence. When addressing what Army Intelligence Transformation is, it states that

MI is transforming... to enable decisive action by Army and Joint
Commanders in an era of persistent conflict, complex environments and
asymmetric challenge... Holistically adapting how we equip, train, share
information, grow leaders, and improve reasoning skills will enhance
capabilities to generate actionable intelligence at the lowest possible level.
This effort is...focused on six key initiatives: increasing MI capacity and
advanced skills readiness; growing Army HUMINT capabilities; forcewide employment of Distributed Common Ground System-Army (DCGSA) capability; revitalizing intelligence training at home station & combat

training centers (CTCs) (Project FOUNDRY); expanding persistent Surveillance & Exploitation capabilities; and changing MI culture. ¹³

LTG John F. Kimmons, former U.S. Army deputy chief of staff, G-2, authored numerous articles chronicling intelligence transformation, clarifying membership in the intelligence enterprise, and defining roles. He emphasized the importance of dynamic leadership in a time of persistent conflict. He urged that the entire Army MI leadership apparatus and organizations must collectively change. The Army G-2 (LTG Kimmons) would provide the guidance and resources, while other elements of Army MI would execute missions (INSCOM), train and develop the force and doctrine (USAIC), and provide capable Soldiers, units, and facilities Military Intelligence Readiness Command (MIRC). In a 2006 article, LTG Kimmons stated that "over the past year Army Intelligence has moved out along four key vectors: modular MI growth and rebalancing; establishment of truly all-source, flat network information solutions down to battalion and brigade combat team (BCT) level, where the majority of [counter terrorism] CT and COIN operations occur; revitalization of human intelligence (HUMINT) forces; and increased intelligence readiness at all levels." In a level of the past year and the province of the past year and the province of the past year and the past year and the province of the past year and the province of the past year and the past year and the province of the past year and year and

Under modular MI growth, multidisciplined intelligence companies will be
organic to every BCT and brigade intelligence (S-2) staff elements will more than
double in size. Simultaneously, eight to ten new MI collection battalions will be
stood up as part of the Corps' battlefield surveillance brigade (BfSB) - the first

 $^{\rm 13}$ 2008 U.S. Army Posture Statement, Information Papers, Army Intelligence Transformation, 2 October 2008.

¹⁴ Lieutenant General John F. Kimmons, "Advancing Army Intelligence To Meet Transformation Goals" Army Magazine, October 2007.

¹⁵ Lieutenant General John F. Kimmons, "Accelerating Army Intelligence Transformation" Army Magazine, October 2006.

unit was activated in 2005. Four joint interrogation and debriefing center (JIDC) battalions will be established - the first activated in April 2006; a USAR Bn activated in 2007 and a second AC Bn in 2008. By 2013, the Army will add more than 7,000 additional MI Soldiers to the ranks. As this growth occurs, Army Intelligence modifies the structures through the force design process based on lessons learned and operational needs statements. More than 90 percent of the growth will support tactical collection and analysis; HUMINT operational capabilities will grow by more than 200 percent. Increasing the number of MI soldiers is absolutely necessary, but that alone is insufficient in today's complex, networked environments.

• The network has to be flattened in order for MI Soldiers and commanders to fully harness the power of the network. The Army's joint intelligence operations capability in Iraq (JIOC-I) is an example of how the Army is leading defense efforts to flatten distributed networks. The Army battle-tested the concepts and tools to operationalize the networks in 2005 and transitioned the capability to the Distributed Common Ground System – Army Program of Record. INSCOM

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¹⁶ Lieutenant General John F. Kimmons, "Accelerating Army Intelligence Transformation" Army Magazine, October 2006.

¹⁷ Army Intelligence Comprehensive Guide to Modularity Version 4.0 Oct 2008. JIOC-I is an Army-led, USJFCOM-supported initiative that enhanced the capabilities of the Multi-national Force – Iraq (MNF-I) Combined Intelligence Operations Center (CIOC), the Multi-national Corps – Iraq (MNC-I) Coalition Analysis and Control Element (CACE) and the intelligence elements of the Major Subordinate Commands (MSC) to defeat insurgency and terrorism, stabilize Iraq, and protect the combined and multi-national force. It consists of commercial and government off the shelf hardware and software acquired on an agile development/quick reaction capability basis to improve the effectiveness of all-source intelligence fusion and information sharing in support of OPERATION IRAQI FREEDOM (OIF). It extends the intelligence fusion network down to the battalion level, enable tactical elements below battalion level to report information and receive alerts at tactically useful classification levels. It is also designed to improve the agility of collection cueing, tasking and integration of theater Intelligence, Surveillance and Reconnaissance (ISR) assets; and to serve as the foundation for collaborative "over watch" (tipping/cueing, indications and warning, and effects-based targeting) at all levels.

- deployed the system and personnel to Camp Liberty Iraq; and it is now being fielded in Afghanistan. ¹⁸
- HUMINT training at the Army Intelligence Center, Fort Huachuca, AZ, continues to expand in capacity and scope. Entry level HUMINT training now incorporates battlefield lessons learned. Under the sponsorship of the Army, DOD created the HUMINT Training Joint Center of Excellence at Fort Huachuca that trains all services in intermediate and advanced military source operations. Interrogation training has also been expanded to incorporate experiences from operations in Iraq and Afghanistan. Counterintelligence training transformed from entry level to mid-career level with initiation of the Counterintelligence Special Agent Course (CISAC).
- Finally in the area of intelligence readiness, initiatives like every soldier is a sensor (ES2), cultural awareness training, language training and Intelligence and Security Command's (INSCOM) Foundry programs¹⁹ have been extremely successful.²⁰

The 2009 Quadrennial Roles and Mission Review Report states that persistent reconnaissance and surveillance capabilities provided by Unmanned Aerial Systems (UAS) have proven to be invaluable force multipliers in Iraq and Afghanistan. As a result DoD has experienced a dramatic increase in operational demand for UAS assets.

¹⁸ Lieutenant General John F. Kimmons, "Accelerating Army Intelligence Transformation" Army Magazine, October 2006.

¹⁹ Army Intelligence Comprehensive Guide to Modularity Version 4.0, Oct 2008. Project Foundry is an initiative to strengthen Army MI skills for Soldiers assigned to DIV and below units. Without regional expertise, the BCT and DIV face a major intelligence ramp-up requirement and a real vulnerability unit regional expertise is developed. Project Foundry's goal is to provide technically proficient, regionally experienced and culturally knowledgeable intelligence personnel to round out the BCT and DIV intelligence forces for deployments and during regional-based training exercises.

²⁰ Lieutenant General John F. Kimmons, "Transforming Army Intelligence" Military Review, November-December 2006.

The numbers of deployed UAS have increased from approximately 167 aircraft in 2002 to over 6000 in 2008, while defense investment in UAS capabilities has dramatically grown from \$284 million in FY 2000 to \$2.5 billion in FY 2008. Concurrent with growing demand for UAS/ISR systems, the rapidly evolving operational battlespace has led to new and emerging mission sets that present challenges and opportunities for developing, acquiring, and employing UAS/ISR capabilities.²¹

Human Intelligence and Counterintelligence

The Central Intelligence Agency and Defense Intelligence Agency have purview over human intelligence (HUMINT) and counterintelligence (CI) and are responsible for providing this information to our nation's policy-makers and military forces, respectively.

HUMINT is a category of intelligence derived from information collected and provided by human sources. Typical HUMINT activities consist of interrogations and conversations with persons having access to pertinent information. The manner in which HUMINT operations are conducted is dictated by both official protocol and the nature of the source of the information. Within the context of the U.S. military, most HUMINT activity does not involve clandestine activities. Both CI and HUMINT do include clandestine HUMINT and clandestine HUMINT operational techniques.²² The primary purpose of CI is shaping the adversary understanding of friendly forces, while the primary purpose of HUMINT is enabling friendly force commanders' understanding of adversary intentions.

Effective employment of Army HUMINT elements in all phases of operations and at all levels from tactical to strategic is paramount to ensuring that commanders have the

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²¹ Quadrennial Roles and Missions Review Report, Department of Defense, January 2009.

²² Wikipedia, 3 February 2009, at 10:59

best possible pictures of their adversaries.²³ In 2003, I was the Battalion Commander for an Operational Military Intelligence Battalion. Within my battalion was an organization called the Analysis and Control Element or ACE.²⁴ There were separate HUMINT and CI sections within the ACE. We deployed to Iraq in January 2004 and was the primary source of intelligence support to the Multi-National Forces-Iraq (MNF-I) and Multi-National Corps-Iraq (MNC-I) Commanders.

Initially, HUMINT operations were very difficult and did not yield timely, accurate information. Multiple factors contributed to poor HUMINT performance. First, operational commanders did not understand their purpose and how to employ them. BG Ralph Baker, Director of Political Military Affairs, J5 and former commander of 2nd BCT, 1st Armored Division, stated, "with the exception of our counterintelligence warrant officer and a few other officers who had some previous HUMINT operation, we neither understood nor anticipated the inadequacy of our conventionally designed intelligence collection and analysis system. More importantly, almost no one understood the dominant role that HUMINT operations would play in developing actionable intelligence on a burgeoning insurgency."²⁵

Second, the teams were not familiar with their surroundings or the Iraqi culture. BG Baker goes on to say that "the intelligence system we brought to Iraq was designed to identify conventional enemy formations, and our intelligence personnel were trained to

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²³ Field Manual No. 2-0, "Intelligence," Headquarters Department of the Army Washington, DC, 17 May 2004

²⁴ Field Manuel No. 34-25, Corps Intelligence and Electronic Warfare Operations, Headquarters Department of the Army Washington, DC, 30 September 1987. The mission of the ACE is to perform collection management; produce all-source intelligence; provide Intelligence and Electronic Warfare (IEW) technical control; and disseminate intelligence and targeting data. The ACE supports the commander in executing battle command and planning future missions across the range of military operations.
²⁵ Colonel Ralph O. Baker, "HUMINT-CENTRIC OPERATIONS: Developing Actionable Intelligence in

the Urban Counterinsurgency Environment" Military Review, March-April 2007.

conduct predictive analysis about an enemy based upon our knowledge of his equipment and doctrine. Exactly none of these conditions existed after Saddam's army was defeated."²⁶ Finally, there was a lack of interpreters who were cleared at the required level to be a part of the team.

HUMINT has improved significantly in Iraq and many of the lessons learned are being incorporated into training and preparing forces for future deployments. Action is well underway to establish HUMINT platoons (comprised of three organic HUMINT teams and embedded HUMINT plans and operations elements) in every MI Company at the BCT level, and two robust HUMINT companies are being incorporated into every BfSB MI battalion (35 additional HUMINT teams of four soldiers each), providing an unprecedented level of tactical HUMINT capability. Experienced HUMINT planning and management sections (S2X) have been added at BCT and division levels. (Each new MI Battalion (Interrogation) that forms the nucleus of a Joint Interrogation and Debriefing Center contains 84 interrogators). Civilian contractors like CACI have filled many of the interpreter requirements.

BG Baker emphasized the changing nature of operations and the importance of HUMINT. He stated, "Both of these critical operations must be embraced; they must become the twin pillars of the framework from which we operate."²⁷

Assessment: The Army's current HUMINT strategy, however, does not translate from a COIN to a conventional environment. It takes time to develop HUMINT capabilities in any environment. In order to be effective units have to establish sources, become

²⁷ Colonel Ralph O. Baker, "HUMINT-CENTRIC OPERATIONS: Developing Actionable Intelligence in the Urban Counterinsurgency Environment" Military Review, March-April 2007.

²⁶ Colonel Ralph O. Baker, "HUMINT-CENTRIC OPERATIONS: Developing Actionable Intelligence in the Urban Counterinsurgency Environment" Military Review, March-April 2007.

familiar with their surroundings and understand the people and culture they are operating in. Iraq and Afghanistan are classic examples of COIN operations, where units can occupy an area of responsibility for the duration of a 12 or 15-month deployment. Historically, conventional engagements have been very fluid and unless a unit is in a defensive posture, it is constantly on the move. When looking at our most likely conventional adversaries, Russia and China, our old approach or way of doing business is probably more appropriate. Lessons learned from our current conflict have definite utility in a conventional environment. Increased HUMINT assets at the BCT and BfSB will make transitioning easier. The obvious issues that come to mind in both of these scenarios are linguists (interpreters and interrogators) and cultural sensitivity training. Both will take time to develop, but because of our old cold war history, and complexity of the languages, Russia would probably be easier to prepare for. The Mandarin language, like Arabic, is a lot more problematic and difficult to learn and like Arabic has different dialects, which makes it tough to master. In addition, there is no single entity that synchronizes military HUMINT and non-military HUMINT operations. DIA's Defense HUMINT Services has had limited success in the past, but DIA's current initiative, Defense Counterintelligence and HUMINT Center (DCHC), may be more successful.

DCHC's vision is to lead, direct, and centrally manage the Defense-wide CI and HUMINT enterprise through the integration of highly skilled CI and HUMINT professionals, development of a D2X for coordination of CI and HUMINT activities worldwide, development of linkages to Defense and National CI and HUMINT organizations to facilitate necessary coordination and de-confliction, leverage

technologies to ensure innovative CI and HUMINT support, and identify areas of discipline overlap to maximize synergies.

Signals Intelligence

The National Security Agency is responsible for providing foreign Signals

Intelligence, or SIGINT, to our nation's policy-makers and military forces. SIGINT

plays a vital role in our national security by providing America's leaders with the critical information they need to save lives and advance U.S. goals and alliances globally.

SIGINT is a category of intelligence that includes transmissions associated with communications, radars, and weapons systems used by our adversaries. It complements other forms of intelligence that are the responsibility of other U.S. agencies in the Intelligence Community. NSA's SIGINT mission is specifically limited to gathering information about international terrorists, as well as about foreign powers, organizations, or persons.²⁸

In any conflict, commanders attempt to dominate the electromagnetic spectrum. They do this by locating, targeting, exploiting, disrupting, degrading, deceiving, denying, or destroying the enemy's electronic systems that support military operations or deny the spectrum's use by friendly forces. The increasing portability and affordability of sophisticated electronic equipment guarantees that the electromagnetic environment in which forces operate will become even more complex. To ensure unimpeded access to and use of the electromagnetic spectrum, commanders plan, prepare, execute, and assess electronic warfare (EW) operations against a broad set of targets within the electromagnetic spectrum.²⁹

²⁸ The National Security Agency/Central Security Services homepage, 17 October 2008.

²⁹ Electronic Warfare in Operations, FM 3-36, February 2009

In chapter 5 (Intelligence and High-Value Target Operations) of a 2008 Fort

Leavenworth Combat Studies Institute publication entitled The United States Army in

Operation Iraqi FREEDOM, BG Baker quipped,

The majority of the Soldiers and systems in these battalions collected signals intelligence (SIGINT) and imagery intelligence (IMINT). Only about 25 percent of the assets in these units collected HUMINT. Once the Coalition pushed Saddam out of power and the transition to full spectrum operations began, the importance of SIGINT and IMINT diminished in relation to HUMINT in their capacity to impact the campaign.³⁰

While this is an accurate statement, once Iraq's communication networks were rebuilt, the truth changed and both SIGINT and IMINT became an integral element to operations in Iraq.

While SIGINT has been a valuable source of intelligence, it has also been very difficult and sometimes impossible to get access to and/or to share the information with the people who need it the most. I have personally experienced the frustrations that come along with SIGINT. I was assigned to a unit that specialized in SIGINT early in my career. When I was a battalion commander, a SIGINT cell resided inside of my unit's ACE. My Soldiers had to go through an exhaustive process to get access to NSA's information and were not allowed to share most of the information that they were able to access. Fortunately I was able to get most of my Soldiers through NSA's bureaucratic requirements prior to our deployment, but still had several Soldiers join the battalion nearly two months after the main body deployed so that they could complete NSA's

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³⁰ Donald P Wright and Timothy R. Reese. On Point II Transition to the New Campaign: The United States Army in Operation IRAQI FREEDOM May 2003 - January 2005, Fort Leavenworth: Combat Studies Institute Press, 2008.

required training and security requirement to get access to SIGINT information. Even more disturbing was after all NSA's requirements were met, they still refused to give us access to most information. To get access to the information required personal intervention by LTG Alexander, who was then the Army G2. While in Iraq on at least one occasion I had to temporarily transfer some of my soldiers to a Division, which had units in daily contact with the enemy, because they did not have any Soldiers trained to NSA's strict requirements to get access to SIGINT information that the Division, Brigade and Battalion Commanders needed to prosecute the war. The troubling part is that this was during the height of the 2004 Jaysh Al Mahdi (JAM) uprising/attacks.

I went back to Iraq in January 2006, to conduct a survey for the Director of Joint Improvised Explosive Device Detection Organization (JIEDDO). Soldiers and Marines that I interviewed informed me that things had improved somewhat but the level of access really depended on the attached NSA representative(s). At the time NSA had Cryptological Support Teams attached to Division level ACEs and had just started integrating its SIGINT Terminal Guidance Teams. The Stryker Combat Units, Armored Calvary Regiment and Marines were starting to experience a high degree of success, but they were the exceptions. While visiting the Stryker combat unit, I was fortunate enough to witness the potential capabilities these teams brought to the fight and it was impressive.

I deployed to Iraq again in March 2008 as the Country Lead for the National Geospatial Intelligence Agency. The changes I observed with SIGINT were astounding. NSA had pushed Cryptologic Support Teams down to the BCT level, and they were conducting operations based on SIGINT and other intelligence on an almost daily basis.

NSA had undergone a philosophical change in the way they did business. This was due to, in large part, new leadership. LTG Alexander was now the Director of NSA (DIRNSA) and his philosophy was to push information down to the lowest level possible. He also believed that operations should be forward in theater so that it would be more timely and relevant. Being forward also gave NSA units additional advantages as well. **Assessment:** I believe the current SIGINT model easily segues from a COIN to conventional environment. The fact that both Russia and China, or any country capable of engaging in conventional warfare, rely on technology makes the conventional environment ripe for exploitation. While language requirements could be problematic, SIGINT operations lend themselves to more options than other intelligence disciplines. In addition, NSA's relationship with other SIGINT producers (tactical and non-tactical units) is unique in that they truly have proponency/control over all SIGINT operations. NSA hosts weekly meetings/VTC in Iraq and Afghanistan with all SIGINT producing entities and guides SIGINT collection; discusses successes and failures; shares TTP; and promulgates emerging changes. NSA leadership, guidance and influence cannot be overstated and truly brings synergy to SIGINT operations.

Geospatial or Imagery Intelligence

The National Geospatial-Intelligence Agency (NGA) is a Department of Defense combat support agency (CSA) and a member of the national Intelligence Community (IC). NGA develops imagery and map-based intelligence solutions for U.S. national defense, homeland security and safety of navigation. NGA provides timely, relevant and accurate geospatial intelligence in support of national security objectives.

The term "geospatial intelligence" (GEOINT) means the exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the Earth. Geospatial intelligence consists of imagery, imagery intelligence and geospatial (e.g., mapping, charting and geodesy) information.³¹

NGA, an organization whose existence goes back decades, has changed its name several times, but one thing remains the same, it has continuously provided outstanding support to the warfighter. From the era of the National Intelligence Support Team (NIST)³² until now, NGA support continues to improve. This is largely due to NGA's leadership and a small cadre of military and civilian volunteers who, like many of our Soldiers, have had multiple tours in both Iraq and Afghanistan. It is significant to note that of all the CSAs, NGA has the smallest military presence, approximately 300. It is also important to note that the director of NGA is a naval officer. VADM Murrett's hands on approach, knowledge of the ground fight and commitment to support it has been lauded by most Army general officers who have served in the Central Command (CENTCOM) Area of Operation and is the driving force behind NGA's support. As I stated earlier, I deployed on behalf of NGA and had the privilege of experiencing their expertise and commitment to the warfighter first hand.

NGA continues to push the envelop and enhance the operational commander's ability to visualize the battlefield. They established Geospatial Support Teams at the Force,

³¹National Geospatial-Intelligence Agency homepage, January 23, 2009

³² Joint Publication No 2-01, Joint and National Intelligence Support to Military Operations, United States Joint Forces Command, October 7, 2004. NIST provides a mission-tailored national intelligence 'reachback' capability to fulfill the stated intelligence requirements of the supported EAC. Normally, it is composed of DIA, Central Intelligence Agency, National Security Agency, National Imagery and Mapping Agency (NIMA) and other intelligence resources as required. At a minimum, the personnel deployed in a NIST provide access to agency-unique information and supporting analysis.

Corps and Division levels and in coordination with NSA recently provided manning down to the BCT level. They integrated NGA analysts into Cryptologic Support Teams (CSTs) providing near real-time fused SIGINT and GEOINT actionable intelligence to Brigade Combat Team Commanders in Iraq. In conjunction with NSA, NGA developed the Tactics, Techniques, and Procedures, as well as identified requirements for integrating GEOINT into the signals intelligence (SIGINT) and human intelligence (HUMINT) find-fix-finish support operations.

Under the auspices and umbrella of Multi-National Support and Transition Command

— Iraq (MNSTC-I) Intelligence Transition Teams, NGA advisors embedded with the Iraqi

Directorate of Imagery and Mapping-Intelligence Affairs (DIMA) and diligently worked
to develop an exceptional relationship with NGA's Iraqi counterparts. This resulted in

Iraqi GEOINT analysts maturing from a nascent capability to the point where they are
providing operational products to Iraqi combat units. These interactions also lead to the
development of a Basic Exchange and Cooperation Agreement (BECA)³³ between NGA
and the Iraqi DIMA. NGA has been lauded at every level for aggressively developing its
relationship with DIMA, and was singled out as the example on how the other
intelligence disciplines and combat support agencies should engage their Iraqi
counterparts. NGA has established a similar relationship in Afghanistan.

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³³ Carlos Montenegro, Agency Teams Enable Iraqi GEOINT Self-Sufficiency, Pathfinder Magazine: International Edition, April 1, 2009. The BECA facilitates the exchange of geospatial data and provide the necessary foundation for the Imagery and Mapping Directorate to support Iraqi military forces with GEOINT and decrease Iraq's reliance on U.S. forces.



NGA and DIMA photo opportunity

NGA developed innovative technological solutions resulting in the first ever-dual connectivity partnership between NGA, CENTCOM, and MNF-I to rapidly disseminate GEOINT data across domains. NGA established the Google Earth capabilities in Iraq and all units in Iraq quickly became heavily dependent on this tool. It ensured that emerging GEOINT architecture technologies was quickly implemented and integrated, such as: the Consolidated Analytic Spatial initiative – Forward (CASi-F) for content storage of data of non-standard imagery products to be shared across the battlefield; Same Day Imagery Server (SDI) to enable analysts to pull near real time imagery for assigned target sets; Real Time Regional Gateway to fuse SIGINT and GEOINT data; integration into the

Distributive Common Ground Station-Army (DCGS-A) query tools; and linking NGA Fiber and Microwave communications networks.

NGA's impact to the warfighter cannot be overstated. NGA's analysis made immediate impacts when they were embedded into the Brigade CSTs. I would like to highlight one of many incidents in which NGA analysis became a combat multiplier to the unit they were supporting. One of the BCTs in Baghdad received information about a potential IED sale location in their area of responsibility. The intelligence section created target packages of the latest activity that occurred at the target site. Overhead images of the site were included in the package. The BCT staff briefed the BCT commander and Battalion commander, who were tasked to conduct the operation, on the mission. Both commanders agreed that a platoon would be needed to conduct the operation. A NGA analyst had been embedded into the BCT two days earlier and was working the night shift. When he arrived on shift that night, the NGA analysis reviewed the mission brief given to the commanders earlier during the day and noticed that the imagery pulled from Google earth was dated. The analyst decided to access NGA's same day imagery server and pull the latest images of the targeted site. To everyone's surprise there had been significant upgrades to the site since the last Google earth image was taken. As a result the mission changed from platoon to company level and was executed flawlessly. Once again, this is just one anecdote that shows the value added NGA was to the warfighter at the BCT level.

Assessment: GEOINT easily transitions from a COIN to conventional environment; however, NGA involvement with UAS/UAV has been a challenge. All the tactical commanders desire full-motion Video, but there are not enough resources to provide this

capability. This issue will probably not be resolved in the near future. However, due to the fact that NGA images the world almost daily and it does not need language skills or cultural training gives GEOINT a distinct advantage when transitioning from various forms of warfare. While NGA does not have the authority and influence that NSA has, it can acquire access to all theater imagery through technology and personnel embedded at the BCT level. NGA is currently exploring methods to provide guidance and leadership to GEOINT entities at the operational and tactical levels.

Intelligence Surveillance and Reconnaissance

The Joint Functional Component Command for Intelligence, Surveillance and Reconnaissance (JFCC ISR)³⁴ is a subordinate command of the United States Strategic Command, one of the nine Unified Combatant Commands under the United States Department of Defense (DOD) and co-located with the Defense Intelligence Agency (DIA). In its relatively new status, it serves as the epicenter for planning, execution and assessment of the United States military's global Intelligence, Surveillance, and Reconnaissance operations; a key enabler to achieving global situational awareness.³⁵

Intelligence, surveillance, and reconnaissance functions are principal elements of U.S. defense capabilities, and include a wide variety of systems for acquiring and processing information needed by national security decisionmakers and military commanders. ISR systems range in size from hand-held devices to orbiting satellites. Some collect basic information for a wide range of analytical products; others are designed to acquire data

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³⁵ Wikipedia, 26 June 2008.

³⁴ James L. Denton, Joint functional command for intelligence, surveillance, and reconnaissance, Joint Force Quarterly, July, 2007. The Joint Functional Component Command for Intelligence, Surveillance and Reconnaissance (JFCC ISR) is a subordinate command of the United States Strategic Command, one of the nine Unified Combatant Commands under the United States Department of Defense (DOD) and colocated with the Defense Intelligence Agency (DIA). In its relatively new status, it serves as the epicenter for planning, execution and assessment of the United States military's global Intelligence, Surveillance, and Reconnaissance operations; a key enabler to achieving global situational awareness.

for specific weapons systems. Some are "national" systems intended primarily to collect information of interest to Washington-area agencies; others are "tactical" systems intended to support military commanders on the battlefield. Collectively, they account for a major portion of U.S. intelligence spending that, according to media estimates, amounts to some \$40 billion annually.³⁶

There never seems to be enough ISR to go around. In addition, there are differences of opinion between the Services on who should control certain ISR platforms. The biggest concern with the future of ISR is how it will be managed and who will manage it.³⁷ The Air Force is lobbying for proponency of UAV/UAS.

Senior Air Force officials are petitioning the Pentagon's civilian leadership to name the service as the Defense Dept.'s executive agent-setting requirements and standards as well as guiding development-for unmanned aerial vehicles as part of an effort to expand its core missions beyond the "silk scarf" force of manned aircraft. The service also would guide development of this expanding and lucrative new technology. This is seen by both military and aerospace industry officials as part of a larger

³⁶ Best Jr., Richard, Intelligence, Surveillance, and Reconnaissance (ISR) Programs: Issues for Congress, A CRS Report for Congress, February 22, 2005.

³⁷Lieutenant General Raymond T. Odierno, Lieutenant Colonel Nichoel E. Brooks, Lieutenant Colonel Francesco P. Mastracchio, ISR Evolution in the Iraqi Theater, Joint Forces Quarterly/issue 50, 3rd quarter 2008. To gain understanding and provide the battlespace owners at all echelons situational awareness, ISR must be robust and dynamic and controlled at the right headquarters in order to get commanders the information and intelligence needed to make decisions on a decentralized COIN battlefield. It imperative that ISR asset control, from tactical through theater level, be pushed to the lowest possible echelon, while it is simultaneously managed by the corps to maintain flexibility. Decentralized control of intelligence assets, including aerial collectors regardless of Service, is a key tenet of COIN doctrine. As stated in Field Manual 3–24, Counterinsurgency, "effective COIN operations are decentralized, and higher commanders owe it to their subordinates to push as many capabilities as possible down to their level."

effort to position the service as the Pentagon's primary force for operational intelligence, surveillance and reconnaissance (ISR).³⁸

Since I have been in the Army, Army and Air Force opinions have differed on close air support (CAS) to ground forces. On multiple occasions the Air Force almost eliminated the Army's primary CAS system, the A-10 Warthog, and for the most part, the Army's opposition was disregarded. Based on this experience and others involving the Air Force leadership, begs the question if the Air Force is capable or willing to provide ISR support to the Army in the manner that is need to conduct successful combat operations. In all fairness to the Air Force, they have made significant contributions in the ISR arena and the Army would not have been nearly as successful without the Air Force's expertise.³⁹ However, despite the ongoing successes with the Combined Air Operations Center (CAOC), there is concerned that the Air Force leadership does not fully appreciate how Army commanders utilize these systems and why, and if given executive agency over ISR, they would change TTPs in a manner that would not be advantageous to the Army. Indeed, "critics are concerned that the Air Force would intentionally or inadvertently undermine the needs of its sister services in the name of commonality and savings."⁴⁰ As an intelligence professional, I am in full agreement with the idea that the organization or unit providing the service is probably best qualified to determine what is needed to

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³⁸ Amy Butler and David A. Fulghum, "New Frontiers," Aviation Week & Space Technology, March 7, 2005.

³⁹ Lieutenant General Raymond T. Odierno, Lieutenant Colonel Nichoel E. Brooks, Lieutenant Colonel Francesco P. Mastracchio, Evolution in the Iraqi Theater, Joint Forces Quarterly/issue 50, 3rd quarter 2008. One initiative that has helped tactical commanders in Iraq integrate theater ISR assets into their operations is the presence of Combined Air Operations Center (CAOC)/Combined Forces Air Component Command (CFACC) ISR liaison officers at division headquarters. Providing these Air Force subject matter experts as advisors to division staff sections and as key members of the intelligence-operations team has been a combat multiplier. It would also be extremely helpful to have these experts at BCT level to provide the CAOC and related organizations with insight into the operations they support.

⁴⁰ Amy Butler and David A. Fulghum, "New Frontiers," Aviation Week & Space Technology, March 7, 2005

support a customers stated requirements; however, when it comes to ISR, I believe that the Army's experience in developing and using ISR platforms makes them as qualified and in some cases more qualified to make the decision on what system can best serve their needs.

I have personal experiences with parochialism within the services when I was commanding in Iraq. When we arrived in Iraq and conducted a relief in place with the out going unit, my B Company, Tactical Exploitation of National Capabilities (TENCAP), initially co-located with the rest of the battalion in the Baghdad area. B Company's primary mission was to provide imagery support to MNF-I and MNC-I. The Tactical Exploitation System-Forward (TES-F) was the primary tool used to provide this capability. Most of the tactical imagery came from the Air Force via its mobile stretch (MOBSTR) system. The TES-F was able to receive the same imagery feed the MOBSTR received as long as the TES-F occupied the same footprint (co-located). A few months after we arrived, the Air Force made the decision to move its MOBSTR system to the Balad area. Naturally we moved the TES as well.

About seven months into our deployment the TES-F was due for a scheduled upgrade. Upgrades rarely go as planned and often have delays, thus upgrades are usually deferred or postponed until a unit redeploys; however, on this occasion, the Air Force was upgrading some of its imagery capabilities that neither the MOBSTR nor the TES-F could take advantage of in their current configuration. It was decided that the benefits of being able to access the improved imagery far outweighed the risks of the TES-F being non-functional for longer than expected. We devised work-arounds to access the imagery we were currently receiving, and although it would not be as timely as the TES-F system

provided, the products that were currently being produced were not tactically oriented and time sensitive. Fortunately the upgrade was successful and the TES-F was now capable of receiving imagery from the new Air Force systems. However the Air Force would not allow the TES-F to receive this information because a ground unit would control the sensors on an Air Force platform. I attempted to resolve this issue by offering to allow Air Force personnel to sit in the TES-F and control the sensor while the aircraft were flying their missions. Despite my best efforts and the efforts of my Air Force counterpart as well as the efforts of the MNF-I C2, MG Barbara Fast, our solution was rebuffed by the Air Force leadership. This is parochialism at its worst and it deprived soldiers--who were in contact with the enemy on a daily basis--of intelligence that could have given them a significant advantage. This over the trivial issue of intelligence information being funneled through a non Air Force system.

The current system in U.S. Central Command is serving us well in support of Operation Iraqi Freedom. The combatant commander apportions ISR to subordinate units, including MNF–I and Multi-National Corps-Iraq (MNC–I), based on his priorities. MNC–I can then weight the battlefield with a mix of theater- and corps-level systems by allocating ISR assets to subordinate divisions, combined joint special operations task forces, and BCTs/RCTs based on the commander's priorities. Corps, as the operational headquarters for coalition forces, is really the highest level at which this

⁴¹ Lieutenant General Raymond T. Odierno, Lieutenant Colonel Nichoel E. Brooks, Lieutenant Colonel Francesco P. Mastracchio, Evolution in the Iraqi Theater, Joint Forces Quarterly/issue 50, 3rd quarter 2008. MNC–I controls its own ISR assets and those apportioned from higher. The assets are then decentralized, either apportioned or allocated down to the lowest level to support operations. Allocated assets are used by the corps to fill emerging high priority requirements in a similar manner to that described above. Apportioned assets, however, are controlled by the MSCs. The divisions write their own target decks and can count on their apportioned assets day after day. There will not be enough ISR assets to execute the new ISR model in a conventional war.

can be done with a true feel for what is going on at all levels, and MNC–I receives virtually all ISR for conventional forces in Iraq.

Employment of ISR, according to the current counterinsurgency (COIN) doctrine, set the conditions for the initial success of the surge in Iraq. Decentralization of ISR assets allowed BCT and regimental combat team (RCT) commanders (faced with vastly different problem sets) to gain and maintain contact with the enemy. ISR evolved along with the fight. The robust ISR currently available at the brigade level provides commanders with an unprecedented level of situational awareness. Commanders now have the flexibility to push ISR assets to the lowest tactical echelon, which is one of the most powerful enablers on the battlefield today.

Most Servicemembers seem to understand the importance of ISR and issues such as Tasking, Processing, Exploitation, and Dissemination (TPED), ⁴² communications architecture, data standard and platform interoperability, and airspace access for operational and training missions are being addressed; but overall employment and command and control seems to be missing from all conversations. This may be due to the fact that commanders are expected to control the employment of their assets, so it is assumed that this falls under their purview. If this is the case, I agree the commander is best suited to make this decision, but I also believe that whatever system is adopted, it needs to be standardized and documented to give everyone a common starting point. The

⁴² Quadrennial Roles and Missions Review Report, Department of Defense, January 2009. Tasking, Processing, Exploitation, and Dissemination (TPED) comprise the people, processes, and systems that transform collected data into operationally executable intelligence. TPED enables warfighters to request collection and intelligence products tailored to meet their operational needs. TPED is vital to the effectiveness of any ISR system, and TPED implications must be considered when planning UAS acquisition and employment. The breadth of current and emerging UAS/ISR missions have caused TPED processes and systems associated with each intelligence discipline (signals, imaging, etc) to differ across the Services, Combat Support Agencies, and from national to tactical assets and applications.

collection manager is the obvious choice to perform this function and for the most part is already doing so, but there does not seem to be one overall proponent for ISR.

The Army is expanding persistent surveillance through both manned and unmanned systems, including Shadow tactical UAS and Warrior extended range multipurpose UAS; modernized Guardrail Common Sensor and Airborne Reconnaissance Low manned fixed-wing sensor platforms; and advanced ground-based systems such as the Prophet family of SIGINT systems, advanced measurement and signature intelligence systems, and biometrics capabilities. Aerial Common Sensor is the Army's next-generation of manned, multidiscipline, multisensory airborne ISR collection system. It will incorporate sensor upgrades, receive data from both Army and non-Army ISR platforms and provide on-board fusion analysis in direct support of ground tactical commanders. Together these systems provide dedicated, downward focused and responsive surveillance and targeting capability to warfighting units.⁴³

Assessment: The current ISR model does not translate very well from a COIN to a conventional environment. To the contrary we are giving the warfighters false expectations. Today's platoon leaders and company commanders will be tomorrow's battalion and brigade commanders. The same goes for today's battalion and brigade commanders being tomorrow's JTF commanders, combatant commanders and service chiefs. There are multiple reasons why it is unrealistic to expect the current level of ISR support during major combat operations. Today UAVs fly unabated because we have good weather conditions and air supremacy, but in MCO, weather conditions may not be as favorable and at best we may have air superiority and that may be for only certain

⁴³ Lieutenant General John F. Kimmons, "Advancing Army Intelligence To Meet Transformation Goals" Army Magazine, October 2007.

periods of time. In addition, air defense systems will be proliferated throughout the battlefield. This will significantly increase the vulnerability of ISR systems. ISR costs are prohibitive and today's financial environment significantly compounds the cost and will do so for the foreseeable future. The warfighters' ISR appetite is insatiable in the CENTCOM theater of operation and there is less than 200K soldiers serving in Iraq and Afghanistan. Compare this number to the over 500K soldiers at the height of the Vietnam conflict and circa the same number that participated in Operation Desert Shield/Storm, and it is easy to see that the current level of ISR support is impossible to sustain. Finally, there is no single entity, Combat Support Agency (CSA) or civilian organization, with ISR oversight; and while JFCC-ISR is the proponent for ISR, the fact that they are a STRATCOM asset that is commanded by the Director of DIA complicates roles and responsibilities.

Structure and Manning

According to LTG John Kimmons, "The 1990's-era MI structure and skills mix at brigade and battalion levels are inadequate for today's demands, a shortfall painfully highlighted by wartime experiences since the 9/11 attacks. Aggressive efforts are now underway to significantly increase the number of MI collectors, intelligence synchronizers, and analysts at brigade and battalion levels. Maneuver battalion S2 (Intelligence) sections have increased from 4 to 9 people (and there are force design plans to add an additional six); BCT S2 sections have more than doubled, from an average of 8 MI Soldiers in a BCT S2 section in 2001 to 21 Soldiers today; and there will be an additional increase, to almost 40 people, by 2011 - part of the 40 is from the Military Intelligence company (MICO). Each transformed BCT has an assigned MI company

with organic HUMINT, unmanned aerial vehicles, signals intelligence (SIGINT), and analysis platoons."⁴⁴ (See Figure 2)



Figure 2. BCT Military Intelligence Company

If the results witnessed in Iraq and Afghanistan are any indication of how the transition in Army intelligence is going, I definitely have to say that it is moving in the right direction. The inception of Battlefield Surveillance Brigade (BfSB) (See figure 3) and assignment of MICO to Brigade Combat teams has been an overwhelming success for COIN operation. The jury is still out on its merits in a traditional conventional environment but it looks promising. General David Petraeus, former MNF-I commander and current CENTCOM commander, constantly lauded the performance of 525th MI Bde/BFSB. Of particular note was the success of its Long Range Surveillance Detachment (LRSD) in engaging insurgents and terrorist in the Al Jazeera Desert.

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 $^{^{\}rm 44}$ Lieutenant General John F. Kimmons, "Transforming Army Intelligence" Military Review, November-December 2006

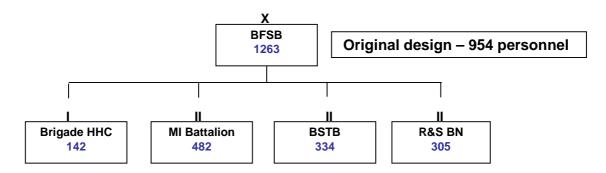


Figure 3. Battle Field Surveillance Brigade.

Intelligence capabilities have been pushed down to the individuals who need them. The BCTs and Battalions are where the true fighting occurs. If you look at the intelligence capabilities that currently reside at the BCT level as well as the proposed additions, you will notice that it is comparable to what resides at the Division G2. (See figure 4.) Add the fact that these S2 shops are being augmented with representatives for the National Agencies and you have a very formidable intelligence capability. Finally, the BCTs have increased the rank of the operations officer from Major to Lieutenant Colonel.

OFF	WO	\mathbf{EM}	TOTAL	OFF	WO	EM	TOTAL
15	16	104	135	10	8	125	143

G2 Main and TAC

BCT S2 section and MICO

Figure 4. G2/BCT Comparison

Having said that, you need the experience and expertise to maximize the tools and resources that you have been given. Currently BCT S2s are Majors. The average Major is being promoted with 9-10 year of service vice the 12-13 year of service required less than five years ago. The acceleration in promotion to Captain and Major has advantages and disadvantages. One of the biggest disadvantages is lack of experience and the expectation to perform at a grade of someone that is two to six years senior.

I believe similar rationale should be applied to the Division G2 position as well. Circa five years ago Military Intelligence started selecting Division G2s via a formal Department of the Army selection board process. The primary reason for adopting this system was to compensate for battalion command positions that were lost when Division level MI Battalion commands were eliminated. The intent was to keep intelligence Lieutenant Colonels competitive for Colonel. Like the accelerated promotion to Captain and Major, this process has met with mixed results as well. In the past Division G2 were senior Lieutenant Colonels who usually served as the Division intelligence battalion commanders. As a result, when they came out of command and assumed the senior intelligence officer role, they knew all the intelligence capabilities that resided within the Division and the best way to maximize their employment to meet the Division Commander's Priority Intelligence Requirements. Today, Division G2s are promotable majors or newly promoted Lieutenant Colonels and they have struggled under the new system. On multiple occasions, the Army G2 has sent senior Lieutenant Colonels or Colonels to assist and mentor the Division G2s that were in a combat environment. Some of the other Divisions that did not request intelligence augmentation from the Army G2, worked with MI assignments or their command to augment their Division G2 with an

additional Lieutenant Colonel. In addition, under the new Division structure, the G3 position has been changed from a Lieutenant Colonel to a Colonel. Other branches in the army are considering increasing the rank of their primary staff officer at the Division level. I believe the MI should strongly consider doing the same.

Training and Readiness

At the onset of Operation Iraqi Freedom, LTG Ricardo Sanchez, CJTF-7 commander stated that MI Soldiers were exceptionally competent at conducting intelligence operations in support of a conventional campaign at the tactical level. "Their instinct, their forte, of course by training, what we had trained these kids for" Sanchez noted, "was to go out and fight a conventional fight and they were pretty damn good at it." However, the CJTF-7 commander remarked that after May 2003, the US Army and the Coalition were no longer concerned with the conventional fight. Since that time Army Intelligence has adapted and made tremendous strides to ensure intelligence Soldiers received the training required to support COIN operations.

HUMINT training has been expanded and strengthened through collaboration between the U.S. Army Intelligence Center and School (USAIC) and the Defense Intelligence Agency's (DIAs) Defense HUMINT Management Office (DHMO). DHMO leaders are establishing joint HUMINT training standards for military-source operations and interrogation training courses, and a Joint HUMINT Training Center of Excellence is being established at the USAIC complex at Fort Huachuca, Arizona."

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⁴⁵ On Point II: Transition to New Campaign The United States Army in Operation Iraqi FREEDOM, May 2003 – January 2005.

Lieutenant General John F. Kimmons, "Transforming Army Intelligence" Military Review, November-December 2006.

Interrogation training has been significantly expanded to incorporate insights from operations in Iraq and Afghanistan. The Army has incorporated "every soldier is a sensor" (ES2) skills into initial entry training across all specialty areas.⁴⁷

Cultural-awareness training complements ES2 by helping Soldiers understand the complex, interwoven dynamics of foreign societies, religions, and regions. USAIC builds and exports cultural-awareness training packages to all U.S. Army Training and Doctrine Command schools and provides specially trained cultural awareness mobile training teams to help forces prepare for deployment to Operation Iraqi Freedom and Operation Enduring Freedom. USAIC also manages the wartime employment of specially recruited and trained foreign-born translator-aide Soldiers to embed a trusted source of culture expertise into committed forces. ⁴⁸

The emphasis on language training is exceptional. The Defense Language Institute
Foreign Language Center (DLIFLC) in Monterey, California, has implemented programs
that support commanders preparing for deployment and enhances USAIC cultural
awareness efforts through mobile training team language instruction, video teletraining
sessions, and expanded formal linguist training tailored for wartime needs. Army Forces
Command complements DLIFLC training through the use of native contract instructors at
home station as well.⁴⁹ In addition, the Army is changing military occupational specialty

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⁴⁷ Lieutenant General John F. Kimmons, "Accelerating Army Intelligence Transformation" Army Magazine, October 2006.

⁴⁸ Lieutenant General John F. Kimmons, "Transforming Army Intelligence" Military Review, November-December 2006.

⁴⁹ Lieutenant General John F. Kimmons, "Transforming Army Intelligence" Military Review, November-December 2006.

(MOS) 35M (HUMINT Collector) to be language capable vice language dependent. Current discussion is for 35Ms to obtain language training to the 1/1/1 level, which indicates minimal proficiency, as an E5. While the 1/1/1 level is far from being fluent, it is a step in the right direction.

INSCOM established a new, Armywide intelligence readiness support program called Foundry in early 2006. The purpose of the program is to create synergy and provide live environment collection/analysis opportunities across the tactical MI force. "The objective is to ensure that deployed MI soldiers, regardless of intelligence discipline, never 'lose contact with the enemy' as they reset and prepare for future wartime deployments."⁵⁰

"The Army and Marine Corps need to develop up-to-date and relevant training simulations and scenarios that expose commanders and their units to the vast complexity of ISR operations as part of pre-deployment training. Commanders and their staffs must know how to fight using all the ISR assets that will be available to them before arriving in theater."

General Odierno's statement "We must train for COIN and conventional environment" is right on the mark, but limited resources make this task easier said than done. The primary focus must be on the events occurring in the CENTCOM AOR. But if we are to be prepared for future MCO, we have to stop robbing Peter to pay Paul. The training and readiness strategy needs to be modified. Based on the new FM 3-O, it needs

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⁵⁰ Lieutenant General John F. Kimmons, "Accelerating Army Intelligence Transformation" Army Magazine, October 2006.

⁵¹ Lieutenant General Raymond T. Odierno, Lieutenant Colonel Nichoel E. Brooks, Lieutenant Colonel Francesco P. Mastracchio, Evolution in the Iraqi Theater, Joint Forces Quarterly/issue 50, 3rd quarter 2008. ⁵² Lieutenant General Raymond T. Odierno, Lieutenant Colonel Nichoel E. Brooks, Lieutenant Colonel Francesco P. Mastracchio, Evolution in the Iraqi Theater, Joint Forces Quarterly/issue 50, 3rd quarter 2008.

to be a balanced approach. If we look at WWII and Desert Storm, there were stability and reconstruction operations aspects as the Army conducted offensive operations. Once an area was cleared of enemy troops, follow-on forces initiated operations to secure the rear area, reconstruct essential services and establish the rule of law.

Verdict and Recommendations:

Redefining the readiness cycle: Army Intelligence is doing well, but can do better. In some areas we have focused on COIN at the expense of MCO. On March 10-11, the Atlantic Council hosted a conference entitled "The Audacity for Change." On the last day of the conference during the final recommendations session, one of the speakers quoted one of our military leaders as saying that 'we must balance the MCO war against the most likely war.' He also stated that the military must be adaptive enough to handle uncertainty. I strongly agree with both statements, but understand that financial realities will force us to come up with innovative ways to be prepared to support the warfighter's intelligence requirements, whatever they may be. Being a product of the Fort Bragg and the 82nd Airborne Division, I am a proponent of the readiness cycle the division operates under and think that it has some merit to the way Army intelligence provides support to the Army. This cycle has three phases - ready, training and support. Since everyone seems to be in agreement that we are in a period of persistent conflict and MCO is unlikely, at least 50% of the personnel should focus on the current crisis, 30% should focus on conventional operations or MCO and 20% focus on training and support. Approximately 10-15% of the force should rotate to one of the other phases each year with the goal of staying in a phase for a three-year period. Of course, exceptions can and will have to be made especially in the training and support phase, but this is a general

plan. This will allow our professional core or career Soldiers to maintain a level of proficiency in every area, letting them focus on a specific set of tasks without worrying about other tasks. It will also help us to focus our training.

Conducting risk assessments: In the area of HUMINT, DOD and Department of State (DOS) should identify all of our potential adversaries and prioritize them based on risk to the U.S. Then determine the number of linguists required to prosecute a war with a potential adversary and start identifying, interviewing, and vetting potential individuals that speak the language and understand the culture. It is imperative that we do this now we must be proactive and not reactive. It is also important to formalize a plan to contact these individuals and incorporate them into the government if and when the time comes. We must exercise this plan periodically and modify it as required. Some of these individuals can and are already working for the government. However, we likely need to identify many more. We must also have an ample pool of linguists in our military as well. We have already started the process by designating a new linguist Military Occupational Skill (MOS) and creating linguist battalions in some of our reserve forces. We have already done this to some degree through the use of native contract instructors at home stations and the wartime employment of specially recruited and trained foreignborn translator-aide Soldiers; however, these programs must be expanded to cover other countries on the priority list as well.

SIGINT capabilities are adequate: The BCT SIGINT platoon is equipped to meet today's battlefield requirement, and Theater has resourced most BCTs with a cryptologic support team and SIGINT terminal guidance teams from strategic assets to augment their

organic SIGINT analytic and collection capability, providing the ability to tap into vast national resources.⁵³ This is a successful strategy for both COIN operations and MCO. **More ISR?:** Recognition of the importance of manned and unmanned teaming in the COIN environment, where precision and timeliness are essential, show that one tactical UAV platoon per BCT will not be enough to provide the "unblinking eye" required for success. Therefore, BCTs depend on the allocation of corps- and theater-level systems to help them accomplish their missions. Persistent surveillance may not be needed in a conventional war, but if it is required, it will be limited. In a COIN environment, air supremacy is achievable; however it is unlikely in a conventional environment, at least initially. Air superiority is achievable, but will limit the freedom of movement for some ISR platforms – manned and unmanned.⁵⁴

Elevate G2/S2 ranks: I also believe we need to change the rank structure of our BCT and Division S2s/G2s. Both the BCT operations officer and Division operations officers have been elevated. Lieutenant Colonels now serve at the BCT level and Colonels serve at the Division level. I recommend that Army Intelligence change the rank structure at both levels to mirror our combat arms brethren. I believe that promotion acceleration and Division G2s struggling to provide intelligence support during combat operations warrant these changes. In addition, the inexperience of officers at both the BCT and Division levels and the trend to push resources down to the lower levels support this course of action

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Lieutenant General Raymond T. Odierno, Lieutenant Colonel Nichoel E. Brooks, Lieutenant Colonel Francesco P. Mastracchio, Evolution in the Iraqi Theater, Joint Forces Quarterly/issue 50, 3rd quarter 2008.
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Intelligence proponency: Finally, DOD and Director of National Intelligence (DNI) should adopt the NSA SIGINT model and designate a Combat Support Agency (CSA) or service to be the proponent for HUMINT and GEOINT operations. This will bring much-needed synergy to all the intelligence disciplines.

Conclusion:

The United States has been in a constant state of war for seven years. During this time the U.S. Army has adapted and transitioned to meet the ongoing challenges in Iraq and Afghanistan and prepared for what it believes will be future threats and conflicts. Most would argue that the Army transition from a static and inflexible Division based forces to an extremely, flexible, modular Brigade Combat Team (BCT) forces has been very successful. MI has incorporated lessons learned into the Army's modular design that supports the warfighting focus from Division to BCT level operations and equips Soldiers for the asymmetric fight. This transformation has created a significant increase in the size and capability of tactical intelligence elements, expanding the HUMINT force, and accelerating the development/fielding of "flat" network Distribute Common Ground System- Army (DCGS-A) capabilities down to Battalion level to ensure distributed, allsource data access. These initiatives have also resulted in major changes in the way Army Intelligence trains and sustains combat readiness.⁵⁵ While there are many reasons for the successes in Iraq, the emergence of the modular force, oriented around the taskorganized BCT versus the Divisional frame, definitely deserves some of the credit. Having said that, the metamorphosis of Military Intelligence during this period has been

⁵⁵ 2008 U.S. Army Posture Statement, Information Papers, Army Intelligence Transformation, 2 October 2008.

nothing short of phenomenal and I personally believe is the main reason for the turnaround in Iraq.

A lot of things have changed since the Army/Army Intelligence transition began. One of the biggest is the global recession. It is obvious that some of our plans will probably change. Everyone will have to sacrifice in order for us to get through this crisis and the Army has been called upon to do its part. The question is how much it will impact defense policy and spending--which could significantly change current transition-- as well as future plans.

I concur with the Army G-2's statement "ongoing MI transformation actions empower our Soldiers for the asymmetric fight through responsive, agile intelligence support at all tactical level across the full spectrum of operations. Army MI is taking aggressive action to meet today's challenges in close collaboration with Joint, Department of Defense and national intelligence partners." Realizing that we cannot focus on everything, I am somewhat concerned that our readiness for conventional warfare is lacking. The potential price we could pay for not being prepared for an encounter with Russian, China or another conventional force pales to the sacrifices we have made in Iraq and Afghanistan. If history is any indicator of causalities suffered in conventional warfare, other than Desert Storm, we could accumulate losses equal or similar to those suffered in Iraq and Afghanistan during the last eight years in one day.

Prudence alone requires us to change our strategy and become more balanced in our approach. The Chief of Staff of the Army has recognized that the Army has focused on COIN operations at the expense of conventional expertise and is attempting to bring the

⁵⁶ Lieutenant General John F. Kimmons, "Advancing Army Intelligence To Meet Transformation Goals" Army Magazine, October 2007.

force back into balance. To ensure the United States Army continues to be successful and prepared to fight our Nation's battles, conventional or unconventional, Military Intelligence must do the same.

BIBLIOGRAPHY

Gates, Robert M., "A Balanced Strategy: Reprogramming the Pentagon for a New Age," Foreign Affairs, January/February 2009.

Pyne, David T., "Memorandum to Secretary of Defense Designate Donald Rumsfeld: A Feasibility Study on the Chief of Staff of the Army's Transformation Plan" (December 7, 2000).

http://www.geocities.com/equipmentshop/tanklessarmy.htm

Shinseki, GEN Eric, "Association of the United States Army (AUSA) conference Speech," October 12, 1999.

Mattis, General J.N., "Assessment of Effects Based Operations" Memorandum for U.S. Joint Forces Command (14 August 2008).

Schoomaker, General Peter, US Army Homepage, Statement by General Peter Schoomaker, Chief of Staff United States Army, before the Commission on National Guard and Reserves.

 $\frac{http://www.army.mil/-speeches/2006/12/14/989-statement-by-general-peter-schoomaker-chief-of-staff-united-states-army-before-the-commission-on-national-guard-and-reserves/index.html$

Quadrennial Defense Review Report, February 6, 2006. http://www.globalsecurity.org/military/library/policy/dod/qdr-2006-report.htm

Siemieniec, SSG Jack, "Army chief of Staff expands on Army Vision," Army New Services (February 11, 2000).

 $\frac{http://www.mccoy.army.mil/readingroom/triad/02112000/Army\%20vision\%20explained.}{html}$

2008 U.S. Army Posture Statement, Information Paper, "Army Intelligence Transformation,"

 $\underline{http://www.army.mil/apss/08/information_papers/transform/Army_Intelligence_Transformation.html}$

Thurman, LTG James D., "The Army Strategy," Headquarters Department of the Army (22 August 2008).

The Army Campaign Plan 2008, March 2008. http://www.army.com/news/item/3570

Rumsfeld, Donald, *Quadrennial Defense Review*, (Office of the Secretary of Defense, 6 February 2006)

Army Intelligence Comprehensive Guide to Modularity Version 4.0 Oct 2008.

Taleb, Nassim, "The Black Swan: The Impact of the Highly Improbable," Random House Publishing group, 2007.

Kimmons, LTG John, "Accelerating Army Intelligence Transformation," Army Magazine (October 1, 2006).

http://findarticles.com/p/articles/mi_qa3723/is_200610/ai_n17194323/print?tag=artBody; col1

Kimmons, LTG John, "Advancing Army Intelligence To Meet Transformation Goals," Army Magazine (October 1, 2007).

http://findarticles.com/p/articles/mi_qa3723/is_200710/ai_n21099862/print?tag=artBody; col1

Kimmons, LTG John, "*Transforming Army intelligence*," Military Review (Nov-Dec 2006).

 $\underline{http://findarticles.com/p/articles/mi_m0PBZ/is_6_86/ai_n27084055/print?tag=artBody;col1}$

Poss, James, "Intelligence Training Transformed," Spokesman Magazine (August 1, 2006).

http://findarticles.com/p/articles/mi_m0QUY/is_8_46/ai_n26968167/print?tag=artBody;c ol1

Ackerman, Robert, "Transforming Military Intelligence: A new office aims to keep pace with U.S. and adversarial advances," Signal Magazine (July 2003)

Wikipedia, 3 February 2009. http://en.wikipedia.org/wiki/HUMINT

Field Manual No. 2-0, "*Intelligence*," Headquarters Department of the Army Washington, DC, 17 May 2004.

National Security Agency/Central Security Services homepage, October 17, 2008. https://www.nsa.gov

National Geospatial-Intelligence Agency homepage, January 23, 2009 http://www1.nga.mil/Pages/Default.aspx

Army Intelligence Comprehensive Guide to Modularity Version 4.0, Oct 2008.

Best Jr., Richard, *Intelligence, Surveillance, and Reconnaissance (ISR) Programs: Issues for Congress*, A CRS Report for Congress, February 22, 2005. http://www.fas.org/sgp/crs/intel/RL32508.pdf

Wikipedia, 26 June 2008.

http://en.wikipedia.org/wiki/Joint_Functional_Component_Command_for_Intelligence,_ Surveillance_and_Reconnaissance

2008 U.S. Army Posture Statement, Information Papers, Army Intelligence Transformation, 2 October 2008.

http://www.army.mil/aps/08/information_papers/transform/Army_Intelligence_Transformation

Gates, Robert M., "Quadrennial Roles and Missions Review Report," Department of Defense, January 2009.

Baker, Colonel Ralph, "HUMINT-CENTRIC OPERATIONS: Developing Actionable Intelligence in the Urban Counterinsurgency Environment" Military Review (March-April 2007).

Kimmons, Lieutenant General John, "Accelerating Army Intelligence Transformation" Army Magazine (October 2006).

Kimmons, Lieutenant General John, "*Transforming Army Intelligence*" Military Review (November-December 2006).

Poss, Colonel James, "Intelligence training transforms" Spokesman Magazine (August 2006).

Kimmons, Lieutenant General John, "Advancing Army Intelligence To Meet Transformation Goals" Army Magazine (October 2007).

Odierno, Lieutenant General Raymond T., Brooks, Lieutenant Colonel Nichoel E., Mastracchio, Lieutenant Colonel Francesco P., *'ISR Evolution in the Iraqi Theater*," Joint Forces Quarterly/issue 50, 3rd quarter 2008.

http://www.ndu.edu/inss/Press/jfq_pages/editions/i50/14.pdf

Electronic Warfare in Operations, FM 3-36, February 2009. http://usacac.army.mil/cac2/Repository/FM336/FM336.pdf

Wall, Robert, "Know Thine Enemy," Aviation Week & Space Technology (November 29, 2004).

www.AviationNow.com/awst

Fulghum, David A. "Brain Strain: U.S. intel being stretched by demands of high-tech terrorist war that spans continents," Aviation Week & Space Technology (November 8, 2004).

www.AviationNow.com/awst

Baker, Colonel Ralph, "The Decisive Weapon: A Brigade Combat Team Commander's Perspective on Information Operations" Military Review (May-June 2006).

Fulghum, David A. "Pup Listens, Points: UAV surrogate conducts singular intelligence gathering as a test of a new rapid system," Aviation Week & Space Technology (August 23/30, 2004).

www.AviationNow.com/awst

Wall, Robert, "Sigint Snarl: Turf wars loom-from manned aircraft and UAV choice to subsystem's focus," Aviation Week & Space Technology (January 23, 2006). www.AviationNow.com/awst

Sunshine, Robert A., "A Review of the Department of Defense's National Security Personnel System," Congressional Budget Office (November 2008).

Fulghum, David A. "Indispensable Intel: Cuts to new intelligence systems would cripple efforts to fight insurgent, says NGA chief," Aviation Week & Space Technology (October 24, 2005).

www.AviationNow.com/awst

Butler, Amy "Private Eyes: Secret satellite program raises concerns for the future of commercial remote-sensing," Aviation Week & Space Technology (May 19, 2008). www.AviationNow.com/awst

Field Manual No. 3-0, "Operations," Headquarters Department of the Army Washington, DC, 17 May 2004

Fulghum, David A. "The Value of X: New intelligence aircraft will fire electrons, invade networks-maybe," Aviation Week & Space Technology (February 25, 2008). www.AviationNow.com/awst

Fulghum, David A., Butler, Amy and Barrie, Douglas "Long-Range Strike: Strike, recce, intelligence, UAVs-all begin to fuse in a new vision of strategic weaponry," Aviation Week & Space Technology (March 13 2006). www.AviationNow.com/awst

Field Manual No. 3-07, "Stability Operations," Headquarters Department of the Army Washington, DC, (October 2008).

Butler, Amy "Fresh: First images from new Sbirs sensor bring hope for the program after major setbacks," Aviation Week & Space Technology (November 20, 2006). www.AviationNow.com/awst

Doyle, John M. "Explosive Response: U.S. Defense authorization bill targets IEDs, boosts F-22 and JSF alternate engine," Aviation Week & Space Technology (May 8, 2006).

www.AviationNow.com/awst

Fingar, Thomas C., "Global Trends 2025: Transformed World," National Intelligence Council (November 2008).

www.dni.gov/nic/NIC_2025_project.html

Butler, Amy and Walls, Robert "Uncrossing the Signals: U.S. Army is simplifying its approach toward a future Aerial Common Sensor," Aviation Week & Space Technology (November 21, 2005).

www.AviationNow.com/awst

Fulghum, David A. and Butler, Amy "Fancy Budget Footwork: Defense plans revamped as political sparring intensifies," Aviation Week & Space Technology (April 28, 2008). www.AviationNow.com/awst

Mattis, GEN J. N., "The Joint Operating Environment 2008: Challenges and Implications for the Future Joint Forces," US Joint Forces Command (November 25, 2008). https://us.jfcom.mil/sites/J5/j59/default.aspx

Fulghum, David A. and Wall, Robert "Network Attack Gets Tougher: Foes turn off-the-shelf network analysis and attack tools to military use," Aviation Week & Space Technology (January 21, 2008).

www.AviationNow.com/awst

Fulghum, David A. "Electronics Rules: The concept, It's payloads not platforms that matter; becomes a business model," Aviation Week & Space Technology (February 4, 2008).

www.AviationNow.com/awst

Krepinevich, Andrew, "An Army at the Crossroads: Strategy for the Long Haul," Center for Strategic and Budgetary Assessments (2008).

Fulghum, David A. "Sensor Success: Pilots laud new-generation targeting pods, which provide long-range combat identification," Aviation Week & Space Technology (May 23, 2005).

www.AviationNow.com/awst

Fulghum, David A. "Attack on Bombs: U.S. Air Force program weaves surveillance and intelligence to find roots of IED attacks in Iraq," Aviation Week & Space Technology (June 20, 2005).

www.AviationNow.com/awst

Kamiya, MG Jason K., "Commander's Handbook for Strategic Communication," US Joint Forces Command (1 September 2008). www.dtic.mil/doctrine/

Butler, Amy "Take Two: U.S. Army to fly Predator variants after raising vehicle requirement," Aviation Week & Space Technology (August 15, 2005).

www.AviationNow.com/awst

Anselmo, Joseph C. and Butler, Amy "Fresh: Beyond Repair? Negroponte review of NRO satellites spotlights dysfunctional space acquisition system," Aviation Week & Space Technology (September 5, 2005). www.AviationNow.com/awst

Ashley, COL Robert P., "Commander Interview: Questions for division and brigade level commanders on current combat operations," Center for Army Lessons Learned (21 March 2008).

Fulghum, David A. "UAVs The View From Nellis," Aviation Week & Space Technology (September 26, 2005).

www.AviationNow.com/awst

Fulghum, David A. "Overdrive: New roles and missions pile up faster than USAF's UAV equipment and crews," Aviation Week & Space Technology (September 26, 2005). www.AviationNow.com/awst

Field Manuel No. 34-25, "Corps Intelligence and Electronic Warfare Operations," Headquarters Department of the Army Washington, DC, 30 September 1987.

Fulghum, David A. "On Guard: Reserves, Air Guard will fly UAVs to fill Iraq's surveillance needs," Aviation Week & Space Technology (February 16, 2004). www.AviationNow.com/awst

Wall, Robert, "Spying Advances: New satellite architecture, technologies attract increasing NRO attention," Aviation Week & Space Technology (January 5, 2004). www.AviationNow.com/awst

Wright, Donald P. and Timothy R. Reese. *On Point II Transition to the New Campaign: The United States Army in Operation IRAQI FREEDOM May 2003 - January 2005*. Fort Leavenworth: Combat Studies Institute Press, 2008. SUDOC: D 110.2:OP 2/2 http://govdocsreflib.blogspot.com/2009/02/on-point-ii-transition-to-new-campaign.html

Wall, Robert, "Big Brother: Army units in Iraq to receive dedicated intelligence support," Aviation Week & Space Technology (January 3, 2005). www.AviationNow.com/awst

Fulghum, David A. and Wall, Robert "*Near Miss, For Now*," Aviation Week & Space Technology (February 14, 2005). www.AviationNow.com/awst

Joint Publication No 2-01, *Joint and National Intelligence Support to Military Operations*, United States Joint Forces Command, October 7, 2004.

Fulghum, David A. "Hide and Seek," Aviation Week & Space Technology (February 28, 2005).

www.AviationNow.com/awst

Butler, Amy and Fulghum, David A. "New Frontiers," Aviation Week & Space Technology (March 7, 2005). www.AviationNow.com/awst

Montenegro, Carlos, *Agency Teams Enable Iraqi GEOINT Self-Sufficiency*, Pathfinder Magazine: International Edition, April 1, 2009 https://www1.nga.mil/Newsroom/Pathfinder/0702/Pages/AgencyTeamsEnableIraqiGEOINTSelf-Sufficiency.aspx

Butler, Amy and Fulghum, David A. "*Drawing a Line in the Air*," Aviation Week & Space Technology (March 14, 2005). www.AviationNow.com/awst